

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In Re Application of: Dov Hartal et al

Application No.: 09/449,093

Filed: November 24, 1999

For: NATURAL COLORING PRODUCTS

Confirmation No. 5856

Art Unit: 1761

Examiner: C. E. Sherrer

Washington, D.C.

Atty.'s Docket: HARTAL=1B

Date: June 10, 2003

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Honorable Commissioner for Patents
P.O. Box 1450, Alexandria, VA 22313-1450

Sir:

Transmitted herewith is a [X] REPLY TO FINAL ACTION (AFTER APPEAL) - REMARKS AND SUBMISSION OF DECLARATION in the above-identified application.

[] Small entity status of this application under 37 CFR 1.9 and 1.27 has been established by a verified statement previously submitted

[] A verified statement to establish small entity status under 37 CFR 1.9 and 1.27 is enclosed.

[] No fee is required.

The fee has been calculated as shown below:

	(Col. 1)		(Col. 2)	(Col. 3)
	CLAIMS REMAINING AFTER AMENDMENT		HIGHEST NO. PREVIOUSLY PAID FOR	PRESENT EXTRA EQUALS
TOTAL	*	MINUS	**	0
INDEP.	*	MINUS	***	0
FIRST PRESENTATION OF MULTIPLE DEP. CLAIM				

SMALL ENTITY	
RATE	ADDITIONAL FEE
x 9	\$
x 40	\$
+ 135	\$
ADDITIONAL FEE TOTAL	
	\$

OTHER THAN SMALL ENTITY	
RATE	ADDITIONAL FEE
x 18	\$
x 80	\$
+ 270	\$
TOTAL	
	\$

OR

OR

* If the entry in Col. 1 is less than the entry in Col. 2, write "0" in Col. 3.

** If the "Highest Number Previously Paid for" IN THIS SPACE is less than 20, write "20" in this space.

*** If the "Highest Number Previously Paid for" IN THIS SPACE is less than 3, write "3" in this space.

The "Highest Number Previously Paid For" (total or independent) is the highest number found from the equivalent box in Col. 1 of a prior amendment of the number of claims originally filed.

[XX] Conditional Petition for Extension of Time

If any extension of time for a response is required, applicant requests that this be considered a petition therefor.

[] It is hereby petitioned for an extension of time in accordance with 37 CFR 1.136(a). The appropriate fee required by 37 CFR 1.17 is calculated as shown below:

Small Entity

Response Filed Within

[] First - \$ 55.00

[] Second - \$ 200.00

[] Third - \$ 460.00

[] Fourth - \$ 720.00

Month After Time Period Set

Other Than Small Entity

Response Filed Within

[] First - \$ 110.00

[] Second - \$ 400.00

[] Third - \$ 920.00

[] Fourth - \$ 1440.00

Month After Time Period Set

[] Less fees (\$) already paid for month(s) extension of time on .

[] Credit Card Payment Form, PTO-2038, is attached, authorizing payment in the amount of \$.

[XX] The Commissioner is hereby authorized and requested to charge any additional fees which may be required in connection with this application or credit any overpayment to Deposit Account No. 02-4035. This authorization and request is not limited to payment of all fees associated with this communication, including any Extension of Time fee, not covered by check or specific authorization, but is also intended to include all fees for the presentation of extra claims under 37 CFR §1.16 and all patent processing fees under 37 CFR §1.17 throughout the prosecution of the case. This blanket authorization does not include patent issue fees under 37 CFR §1.18.

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RESPONSE UNDER 37 CFR 1.116
EXPEDITED PROCEDURE
EXAMINING GROUP 1761

Handwritten: 6/17/03

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

ATTY.'S DOCKET: HARTAL=1B

In re Application of:)	Art Unit: 1761
)	
Dov HARTAL et al)	Examiner: C. E. Sherrer
)	
Appln. No.: 09/449,093)	Confirmation No. 5856
)	
Date Filed: November 29, 1999)	Washington, D.C.
)	
For: NATURAL COLORING PRODUCTS)	June 4, 2003

**REPLY TO FINAL ACTION (AFTER APPEAL):
REMARKS AND SUBMISSION OF DECLARATION**

Mail Stop AF

Honorable Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

Sir:

This replies to the Final Rejection dated December 18, 2002. Attached hereto is a Declaration in the name of Dr. Hartal, which supports Applicants' arguments.

The claims in the application remain as claims 1-14, 23-28 and 41-45. Applicants again respectfully maintain that these claims define patentable subject matter warranting their allowance, and therefore Applicants respectfully request entry of the attached Declaration, favorable consideration of Applicants' remarks and the attached Declaration, and allowance.

Applicants again wish to thank the Examiner for the courtesies extended during the personal interview held in the Examiner's office on September 4, 2001, at which were present the Examiner, Dr. Mushkin and undersigned. While a full agreement was not conclusively reached, considerable progress was made as indicated in the last sentence of the "Interview Summary".

In general, the claims as amended in the last Reply are consistent with what was discussed during the aforementioned interview.

As also discussed during the interview, Applicants offer to cancel claim 44 if claim 1 is found to be allowable.

Briefly, Applicants again wish to emphasize two points at the outset. The present composition is novel and unobvious in that it has both, i.e. in combination, a very low Brix with a very high lycopene content. Commercial tomato based products, with the exception of tomato juice, have a very high Brix; tomato juice, while having a relatively low Brix (about 4.8 - 5.2), also has a much lower lycopene content, i.e. about 60 ppm, and no higher than 100 ppm, compared to the composition of the present invention (see paragraph 5 of Dr. Hartal's attached declaration).

Second, in the manufacture of tomato based products, the tomato is usually subjected to two unit operations which cause extensive damage to the chromoplasts, these two operations being (1) the application of damaging heat, and (2) the application of intense mechanical activity (see paragraph 4 of Dr. Hartal's declaration). Maintaining a high percentage of intact chromoplasts according to the present invention is essential and is accomplished by avoiding or minimizing these unit operations (see paragraph 1 of Dr. Hartal's declaration). Thus, in accordance with the present invention, the solids are separated from the liquid simply by (gentle) centrifugation (see paragraph 2 of the attached Hartal declaration).

Claims 1-14, 23-28, 44 and 45 have been rejected under the first paragraph of Section 112. This rejection is respectfully traversed.

Support for the concentration of chromoplasts as recited in Applicants' claims is found in line 2 on page 9 of Applicants' specification. It should be understood that as the lycopene is encapsulated in the chromoplasts, the concentration given of 500 to 3,000 ppm is for the lycopene-encapsulated material, i.e. the "chromoplast particles encapsulating crystalline lycopene" as claimed. In other

words, the lycopene of the present invention is encapsulated within the chromoplast, and this is clear from Applicant's specification as a whole, and this is confirmed in paragraph 1 of Dr. Hartal's declaration.

Applicants respectfully request withdrawal of this rejection.

Claims 1-14, 23-28 and 41-45 have been rejected under the first paragraph of §112 as based on a specification which is not enabling as regards extraction of the chromoplasts from the fruit without causing substantial mechanical breakage or destruction of the chromoplasts (e.g. note Applicants' specification at page 7, lines 8-10). This rejection is respectfully traversed.

As pointed out in Applicants' specification and as explained during the aforementioned lengthy interview, centrifugation is known in the art to be a gentle separation process, and this is confirmed in paragraph 2 of Dr. Hartal's attached declaration. Such separation is what is disclosed in Applicants' specification (see page 11, lines 8 and 19, page 13, lines 5 and 13). This separation process is also shown in the examples, attention being invited to the fifth line of Example 1, the second line of Example 2 and the fourth line of

Example 3. That simple centrifugation works is shown by the results which the Applicants obtained.

Certainly those skilled in the present art would have no trouble practicing Applicants' invention based on their common knowledge coupled with Applicants' disclosure as noted above. Indeed, Applicants believe that there would be no experimentation necessary at all. However, if any experimentation were necessary, it would at most be routine experimentation which is well accepted to be permissible under 35 U.S.C. 112. Thus, Applicants respectfully submit that little or no experimentation would be necessary, taking into account the fact that centrifugation is known in the art to be gentle, coupled with Applicants' examples and the results obtained.

Applicants respectfully note that insofar as the prior art is concerned, tomato-based products in particular are always heated substantially. Such heating, particularly when employed with mechanical separation, destroys the chromoplasts (see paragraph 4 of Dr. Hartal's attached declaration).

Withdrawal of the rejection based on the first paragraph of §112 is fully justified, and is respectfully requested.

Claims 1-14, 23-28 and 41-44 have been rejected under the second paragraph of §112. This rejection is respectfully traversed.

Only claim 5 has been criticized in the Final Action of December 18, 2002. Therefore Applicants believe the rejection does not apply to the other claims, and are proceeding in reliance thereof.

The Supreme Court of the United States, in a ruling which has not been overturned by any later Supreme Court decision or by statute, in the famous *Eibel* case, *Eibel Process v. Minnesota & Ontario Paper*, 261 US 45, approved the term "high".

Also please see *Charvat v. Commissioner*, 182 USPQ 77, 585, where "high concentration" was found to be acceptable. In *Ex parte Romentschuk*, 188 USPQ 542, the terminology "small amount" was found to be acceptable. The term "high" in Applicants' claim 5 is not indefinite, because it would be well understood by those skilled in the art upon reading Applicants' specification¹.

As of June 3, 2003, the word "high" had appeared in the claims of 235,418 U.S. patents issued since 1976, showing

¹ Paragraph 7 of Dr. Hartal's declaration confirms that high lycopene content tomatoes are well known.

that "high" is ubiquitous in U.S. patent claims. Attention is respectfully invited to *Ex parte Brian et al*, 118 USPQ 242, 245 (1958) where the Board stated in part as follows:

..., Appellants have referred to numerous patents dealing with the subject matter involved in the present case, which have been allowed on the basis of claims [using particular] characteristics... Since the claims under consideration are similar to those in the patents, we do not feel disposed to reject them and thus upset such a long established practice in the particular art under consideration. Accordingly, we will not sustain the rejection...

Accordingly, claim 5 is not indefinite simply because it includes the term "high".

Applicants respectfully request withdrawal of the rejection based on the second paragraph of 35 U.S.C 112.

Claims 1-14, 23-25, 28 and 45 have been rejected as anticipated by Graves '095. This rejection is respectfully traversed.

As pointed out during the aforementioned interview, after separating the carotenoid-containing natural source into a carotenoid-containing liquid fraction and a pulp fraction (see column 2, lines 54 et seq.), Graves **works with the liquid fraction**, contrary to the present invention, i.e. the Graves second step is

See 11/1/85
Applicant's
response

claims
don't recite
that solvent
not in a liquid

(ii) treating the carotenoid-containing **liquid** fraction with a carotenoid precipitation agent including calcium chloride, calcium hydroxide, calcium lactate or calcium gluconate, so as to fractionate the **liquid** fraction into a carotenoid-enriched solid precipitate portion and a carotenoid-depleted liquid portion,...
(emphasis added)

Then, as previously indicated, Graves further teaches away from the present invention by emphasizing the necessity of disruption of the cell structure of the carotenoid source (column 3, lines 16-19). See paragraph (a) on page 4 of Dr. Hartal's declaration.

The present invention is clearly fundamentally different from Graves: in the present invention, after gentle separation of the solids from the liquid by centrifugation, Applicants obtain the chromoplast encapsulated lycopene from the solid fraction, and avoid disruption of the chromoplast as much as is reasonably possible. Graves is totally antithetical to the present invention.

Withdrawal of the rejection is clearly in order, and is respectfully requested.

Claims 14 and 41-43 have been rejected as anticipated under §102 by Tonnuci, the reference on page 4, paragraph 11 of the Final Office Action to "Tonnuci et al"

being a typographical error. The reasons of the preceding Office Action are repeated. This rejection is respectfully traversed.

As discussed during the interview, Tonnuci relates to commercial tomato-based products such as soups, canned tomatoes, ketchup, spaghetti sauce, tomato paste, tomato puree, tomato juice and tomato sauce. The rejection from the preceding Office Action focuses on Table 3 which shows that tomato paste² has a lycopene content (according to the rejection) of around 550 ppm. But tomato paste has a Brix value of approximately 30° (see paragraph 6 of Dr. Hartal's declaration), far more than what is permitted according to the present invention.

As pointed out during the aforementioned interview, all of the Tonnuci products are commercial products taken so-called "off the shelf". All of these commercial products are subjected to substantial heat during their preparation, causing considerable deterioration of the chromoplasts.

²The earlier final Action, incorporated by reference into the present rejection, also states on page 14, paragraph 56 that it is "well known that tomato juices will have Brix values of around 5, even less than 5." Regardless, no tomato juice would correspond to Applicants' claims because the chromoplast particles will have largely been destroyed by heating to make the canned tomato juice safe, and tomato juice will not contain 500 to 3,000 ppm of chromoplast particles as claimed, i.e. tomato juice contains no more than about 100 ppm, again noting paragraph 5 of Dr. Hartal's declaration.

Therefore, the commercial products as disclosed by Tonnuci cannot meet Applicants' claims wherein the chromoplasts encapsulate the lycopene, it being understood that the chromoplasts in the present invention are largely or even substantially intact.

In paragraph 57 of the earlier Final Action, incorporated by reference into the present rejection, the PTO indicates that it need not give any weight to so-called process limitations. Applicants do not see that there are any process limitations in any of these claims, and accordingly applicant does not understand the point raised in paragraph 57. The criticized claims are directed to a particular type of product, and the language in question defines what the product is. Attention is respectfully invited to *In re Bulloch et al* 203 USPQ 171, 174 (CCPA 1979), where the Court stated as follows:

Although the claims are not drafted in the usual form of use or method claims, we view the "concentrates" (containing alcoholates of AEMT orthophosphates) of the claims as limited to "stable color developers." The introductory claim language "stable color developer concentrate" is more than a mere statement of purpose; and that language is essential to particularly point out the invention defined by the claims. See *Kropa v. Robie*, 38 CCPA 858, 187 F.2d 150, 88 USPQ

478 (1951); cf. *In re Higbee*, 527 F.2d 1405,
188 USPQ 488 (CCPA 1976).

Also see *In re Steppan et al*, 156 USPQ 143, 147; *In re Garnero*, 162 USPQ 221, 223.

The rejection states at page 7, paragraph 25, that heating is not excluded from Applicants' claims. But this makes no sense, as Applicants' claims 14 and 41-43 are directed to a product, not a process, and indeed directed to a product which cannot be produced by the heating required to produce the commercial products discussed in Tonnuci. There is no "reasonable certainty" that any of the Tonnuci products inherently correspond to the product recited in claims 14 and 41-43 (*In re Brinks*, 164 USPQ, 247,249).

Applicants respectfully request withdrawal of the rejection based on Tonnuci.

Claims 1-3, 5 and 23 have been again rejected as anticipated under §102 by Iwatsuki, repeating the earlier rejection. This rejection is respectfully traversed.

Iwatsuki was discussed at some length during the aforementioned interview, and it was agreed that Iwatsuki is very difficult (if not impossible) to understand. Fig. 3 is unclear, and it is unclear exactly what Iwatsuki et al did and

obtained. Applicants previously argued that it seems that there are two possibilities, i.e. Iwatsuki et al either obtained a product containing a maximum of 70 ppm of chromoplast particles as per Fig. 3, in which case Iwatsuki clearly would not meet Applicants' claims; or Iwatsuki et al may have totally isolated the chromoplasts as previously argued³, in which case again Iwatsuki would not meet Applicants' claims.

Applicants respectfully especially note the first paragraph under the heading "Results and Discussion" appearing at page 764 of the publication in which Iwatsuki appears. This paragraph indicates that the Iwatsuki method involved "two principle steps: Sephadex G-25 gel filtration of tissue homogenates followed by Percoll density gradient centrifugation." This suggests that Iwatsuki was working on a liquid fraction rather than isolating chromoplasts from any solid fraction, and this is fundamentally contrary to the present invention. See noting paragraph (c) of the attached Hartal declaration.

³ With reference to paragraph 55 on page 14 of the previous Final Action, the PTO misunderstood Applicants' arguments. What Applicants had argued was that Iwatsuki may be directed to **isolation** of the chromoplasts, i.e. it does not relate to a composition as claimed containing 500-3,000 ppm of chromoplast particles. However, Iwatsuki appears to be so unclear as to be non-enabling.

The above noted paragraph from Iwatsuki adds, "Passing the tissue homogenates through the Sephadex G-25 columns prevented the homogenates from gelling. The homogenates from ripe fruits gelled quickly when they were left standing without the gel filtration." This is completely mystifying. The Iwatsuki description makes no sense to Applicants and Applicants respectfully maintain that Iwatsuki is not enabling, and therefore does not anticipate Applicants' claims.

Applicants respectfully request withdrawal of the rejection.

Claims 8, 9 and 11 have been rejected as anticipated under §102 by Dale. This rejection is respectfully traversed.

As is clear from the abstract of Dale, the Dale "process alternatives" all involve substantial heating, which results in destruction of the chromoplasts. On the first page, second column under the heading "MATERIALS & METHODS", it is indicated that the chopped tomatoes were heated to 90°C. Such a "hot break" is called for in all five systems of Dale as shown on the following page, and this is followed by triple effect evaporation. All this use of heat is contrary to the present invention, as such heat "will inherently and

inevitably result in a deterioration of the chromoplasts" noting paragraph (e) of the attached Hartal declaration. In the first full paragraph on page 8 of the new Final Action, the PTO says that the claims do not exclude heating. However, the claims recite a resultant product which cannot be obtained by the process of Dale. Therefore, Dale does not anticipate these claims.

Withdrawal of the rejection is in order and is respectfully requested.

Claims 1-3 and 5-7 have been again finally rejected as anticipated by Brumlick. This rejection is respectfully traversed.

Brumlick, similar to most of the other citations, is interested in a commercial way of making food products including tomato-based or tomato flavored foods or concentrates. In every case as shown in Fig. 1 and described at column 2, lines 57-61, the vegetable juice, separated from the vegetable solids "is passed through one or more filters in a filtering step 15 followed **by evaporating or distilling operations 16** in which a substantial amount of the liquid or water is removed to provide a thick, viscous residue 17." (emphasis added).

Here again, as in Graves discussed above, Brumlick is working with the liquid fraction (absolutely contrary to the present invention) rather than the solid fraction. Then, to make Brumlick even more distinct from the present invention, the liquid is subjected to high heat which would inevitably destroy any chromoplasts present in that fraction. Indeed, the resultant thick, viscous residue 17, obtained after distilling off the water, is then subjected to even more heat in a radiation step 21 "which is sufficient to toast the material..." (Column 3, line 4). Please again see the last sentence of paragraph 1 of Dr. Hartai's attached declaration which makes clear that such heating must be avoided to obtain Applicants' results.

Clearly Brumlick anticipates neither Applicants' process nor Applicants' product. Accordingly, Applicants respectfully request withdrawal of the rejection.

Claims 1-3, 5, 6, 13 and 14 have been again rejected as anticipated by Szabo. This rejection is respectfully traversed.

Szabo relates to the manufacture of tomato puree. As indicated above, in the manufacture of such commercial products, the tomato material is inevitably heated to a

relatively high temperature which inevitably results in the destruction of the chromoplasts.

Exactly what Szabo does is somewhat unclear⁴. However, it appears that after breaking, Szabo obtains a tomato juice (see Fig. 1). Such juice, containing tomato colloids having negative electric characteristics (column 1, lines 45 et seq.) is then subjected to coagulation, preferably using calcium ions.

Next, a "considerable parts of the serum can be decanted and evaporated." (column 2, lines 14-15). Presumably evaporation involves substantial heat. (Bradley says that Szabo "degrades the cellular structure of the tomato macerate.") Evaporation is also mentioned at column 2, lines 19-30, and it is unclear whether this is the same evaporation or a further evaporation. What is obtained eventually is a concentrated serum which smells of tomato (column 2, lines 37-38), clearly suggesting that the chromoplasts have been destroyed, which is in any event inevitable due to the substantial heating applied. Also see column 3, lines 5-10 in this regard.

⁴ The initial burden is on the PTO. The rejection is based on speculation as to what Szabo did. It is simply not disclosed.

The resultant product of Szabo is a tomato puree which "has an attractive appearance, smells like tomato [and can be used to make "dishes"] which have taste and character similar to those made with the traditional tomato purees." In the present invention, the tomato smell and taste are largely eliminated (because the chromoplasts are maintained as claimed), and this proves that Szabo does not inherently produce Applicants' product. Neither the process nor the product of Szabo correspond to the claimed subject matter.

Applicants respectfully request withdrawal of the rejection.

Claims 1-5 and 14 have been again rejected under §102 as anticipated by Bradley. This rejection is respectfully traversed.

As with most of the other references relied upon, Bradley also is concerned with the manufacture of a tomato based food product such as juice, soup, sauces, paste (column 5, lines 12-15). Bradley is particularly interested in a particular part of the overall process involving separating a tomato macerate to a reduced insoluble solids pulp fraction and an insoluble solids-enhanced pulp fraction. At the very beginning, after chopping the fresh tomatoes, they "are heated

to inactivate enzymes" (column 3, lines 6 and 7), and this will destroy chromoplasts. If the tomatoes are macerated using the hot-break method, they are heated to 60-100°C, preferably at least 85°C (column 3, lines 25-30).

Bradley appears to favor the hot-break⁵ procedure, and in this regard suggests higher temperatures for better consistencies, noting column 5, lines 7 and 8:

Generally higher break temperatures yield higher consistencies for both fractions.

In the illustrated embodiment, hot-breaking is disclosed noting the hot-break tanks 110 and 120 (see column 8, lines 3 etc.). In the sole example (column 9), a hot-break tomato macerate is used.

As pointed out above, Bradley also discusses the aforementioned Szabo patent and basically confirms Applicants' position noting column 5, lines 44-50 as follows:

Secondly, the mechanical separation procedure of the prior art [Szabo], i.e. high speed centrifugal separation, unavoidably **degrades** the cellular structure of the tomato macerate,... This **degradation** unavoidably impairs the ultimate consistency obtained in subsequently obtained tomato products. (emphasis added)

⁵ But even the cold-break procedure normally involves substantial heating, noting the Lang reference discussed below.

While the separation practiced by Bradley is apparently less vigorous than that practiced by Szabo, Bradley does not avoid the use of heat. The "rough handling and heat" carried out and taught by Bradley "inevitably results in the destruction of chromoplasts and in oxidization of lycopene", noting paragraph (d) of the attached Hartal declaration.

In the end, Bradley does not and cannot obtain what is claimed, namely

a coloring material in the red color range,
comprising

chromoplast particles encapsulating crystalline
lycopene as the color-imparting agent,

said chromoplast particles being particles separated
from a fruit which contained them,

wherein the coloring material comprises from 500 to
3000 ppm of said chromoplast particles encapsulating
crystalline lycopene, and

wherein the coloring material has a soluble solids
concentration below 5° Bx.

Applicants respectfully request withdrawal of the
rejection.

Claims 1-5, 7, 13 and 14 have again been rejected under §102 as anticipated by Lang. This rejection is respectfully traversed.

Lang suffers from many of the deficiencies of the references already discussed above in the manufacture of a tomato based product for storage and consumption. Heating is unquestionably an aspect of the Lang process, and interestingly Lang defines even the "cold break" method as involving temperatures of 70-75°C (column 2, lines 3-9) with tomatoes processed according to the "hot break" method being heated to 95-100°C.

In Lang, the tomato slices are heated to a temperature of at least 65°C (abstract line 5; column 2, lines 28-31), and more preferably at least 75°C (column 2, lines 64). Apparently the temperature must be sufficiently high to denature the polygalactonase in the tomatoes (column 2, lines 3 and 4; lines 67 and 68). In the illustrated embodiment, the tomato serum is heated to approximately 95°C (column 4, lines 24-25). As pointed out above, the processing including such heating inevitably ruptures the chromoplast walls. See paragraph (f) of the attached Hartal declaration.

As with the other prior art documents discussed above, Lang does not and cannot obtain the claimed subject

matter including chromoplast particles encapsulating crystalline lycopene, wherein the coloring material comprises from 500-3,000 ppm of the chromoplast particles, and wherein the coloring material has a soluble solids concentration below 5 degrees Brix, as claimed. There is no reasonable certainty that Lang inherently produces the claimed subject matter, and indeed it is clear that Lang does not and cannot do so.

Applicants respectfully request withdrawal of the rejection.

Claims 26 and 27 have been again rejected as obvious under \$103 from Graves in view Horn. This rejection is respectfully traversed.

Graves has been discussed above where it has been pointed out how Applicants' claims define over Graves. Horn has not been cited to make up for what Applicants have pointed out that Graves does not have. Therefore, even if the combination were obvious (not conceded by Applicants), the resultant combination would not correspond to what is claimed.

Applicants respectfully request withdrawal of the rejection.

Claims 1-5, 7, 13 and 14 have again been rejected as obvious from Lang in view Brumlick. This rejection is respectfully traversed.

The ways in which the present invention defines over Lang have been discussed above. Brumlick does not make up for these differences and has not been cited to do so. Therefore, even if the proposed combination were obvious, not admitted by Applicants, the resultant combination would not correspond to the claimed subject matter.

Applicants respectfully request withdrawal of this rejection.

Claims 1-14 and 24-28 and 45 have been rejected as obvious from Tonnuci in view of Dale. This rejection is respectfully traversed.

Both Tonnuci and Dale have been discussed above, and both relate to similar subject matter, i.e. commercial tomato based products which have been subjected to substantial heat during their manufacture. No possible combination of these documents could result in Applicants' claimed subject matter, even if the combination were obvious.

Applicants respectfully request withdrawal of this rejection.

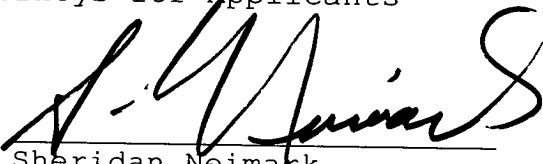
None of the references⁶ even hint at the present invention. Applicants have shown that heat is invariably used in the manufacture of tomato based food products, and that heat disrupts the chromoplast shell exposing the crystalline lycopene to easy degradation. This is confirmed as factual in the attached declaration of Dr. Hartal. The present invention has solved problems which existed in the prior art, thereby solving a long felt need, and defines novel and unobvious subject matter warranting allowance.

Applicants' claims meet the requirements of §112, define novel and unobvious subject matter under Sections 102 and 103 and should be allowed. Accordingly, Applicants respectfully request favorable consideration and allowance.

Respectfully submitted,

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Attorneys for Applicants

By


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⁶ Applicants must complain about the reliance of the PTO on so many different references, which Applicants believe is contrary to the spirit, if not the letter, of MPEP 706.02.